

*Ephemeris for Physical Observations of Jupiter, 1880-81.* By A. Marth, Esq.

Mr. Marth, *Ephemeris for*

XL. 7,

Greenw. Noon.	Angle of Position of $\mathcal{L}$ 's Axis.	Latitude of Earth above $\mathcal{L}$ 's Equator.	Annual Parallax.	Equat. Diam.	Greatest Phase.	Longitude of $\mathcal{L}$ 's Meridian directed to the Earth. Diff.	Corr. of Long.
1880.							
June 18	335°698	+2°616	+2°322	37'83	0°364	196°69	+0°55
23	335°792	2°655	2°338	38'38	°385	229°37	°57
28	335°879	2°693	2°353	38'95	°403	262°11	°59
July 3	335°959	2°730	2°369	39'55	°418	294°91	°61
8	336°032	2°766	2°384	40'17	°429	327°78	°61
13	336°096	2°800	2°400	40'82	°434	0°72	°61
18	336°152	2°832	2°415	41'48	°435	33°73	°60
23	336°198	2°863	2°430	42'15	°430	66°81	°59
28	336°232	2°892	2°445	42'84	°420	99°97	°56
Aug. 2	336°255	2°919	2°460	43'53	°403	133°19	°53
7	336°265	2°944	2°474	44°22	°380	166°48	°49
12	336°262	2°966	2°489	44°00	°352	199°84	°45
17	336°247	2°985	2°503	45°57	°318	233°27	°40
22	336°219	3°001	2°517	46°22	°281	266°76	°35
27	336°179	3°014	2°531	46°83	°240	300°31	°29
Sept. 1	336°129	3°023	2°545	47°41	°198	333°91	°24
6	336°068	+3°028	+2°559	47°93	°155	7°55	+0°19
						4353°68	

Greenw. Noon.	Angle of Position of J's Axis.	Latitude of Earth above J's Equator.	Annual Parallax.	Equat. Diam.	Greatest Phase.	Longitude of J's Meridian directed to the Earth. Diff.	Corr. of Long.
1880.							
Sept. 11	335°999	+3°030	+2°573	48°39	0°115	41°23	+0°14
16	335°924	3°027	2°586	48°79	0°78	74°94	0°09
21	335°845	3°020	2°599	49°10	0°47	108°66	0°05
26	335°762	3°008	2°612	49°34	0°23	142°38	0°03
Oct. 1	335°679	2°993	2°625	49°48	0°07	176°09	+0°01
6	335°596	2°974	2°637	49°52	0°00	209°78	0°00
11	335°516	2°951	2°650	49°47	0°03	243°44	0°00
16	335°441	2°925	2°662	49°33	0°16	277°04	0°02
21	335°371	2°897	2°674	49°09	0°37	310°58	0°04
26	335°307	2°866	2°686	48°77	0°66	344°05	0°08
31	335°251	2°834	2°698	48°37	0°100	17°44	0°12
Nov. 5	335°203	2°802	2°710	47°89	0°139	50°74	0°17
10	335°162	2°769	2°721	47°35	0°180	83°93	0°22
15	335°129	2°737	2°732	46°76	0°221	117°03	0°27
20	335°104	2°705	2°743	46°12	0°260	150°02	0°32
25	335°087	2°675	2°754	45°45	0°297	182°90	0°37
30	335°077	2°647	2°765	44°76	0°330	215°67	0°42
Dec. 5	335°074	+2°621	+2°776	44°05	0°357	248°34	-0°46
						4352°57	

Greenw. Noon.	Angle of Position of ☿'s Axis.	Latitude of Earth above ☿'s Equator.	Annual Parallax.	Equat. Diam.	Greatest Phase.	Longitude of ☿'s Meridian directed to the Earth. Diff.	Corr. of Long.
1880. Dec. 10	335°079	+2°598	+10°72	43°33	0°378	280°91	0°50
15	335°092	2°577	11°02	42°61	°393	313°38	°53
20	335°112	2°559	11°25	41°91	°403	345°75	°55
25	335°139	2°544	11°39	41°21	°406	18°04	°56
30	335°175	2°532	11°46	40°53	°404	50°24	°57
1881. Jan. 4	335°220	2°523	11°44	39°87	0°396	82°37	0°57
9	335°273	2°516	11°36	39°23	°384	114°43	°56
14	335°335	2°513	11°21	38°62	°368	146°42	°55
19	335°406	2°512	10°99	38°04	°349	178°36	°53
24	335°487	2°514	10°71	37°49	°327	210°24	°50
29	335°579	2°518	10°37	36°97	°302	242°08	°47
Feb. 3	335°681	2°524	9°99	36°48	°277	272°88	°43
8	335°795	2°533	9°56	36°02	°250	305°64	°40
13	335°920	2°543	9°08	35°59	°223	337°38	°36
18	336°056	2°556	8°56	35°19	°196	9°09	°32
23	336°204	2°570	8°01	34°83	°170	40°79	°28
28	336°365	+2°584	+7°42	34°50	0°144	72°47	—0°24
		+2°928				435°168	

The "annual parallax" is the difference of the Jovicentric longitudes of the Sun and the Earth, reckoned in the plane of *Jupiter's* equator. If the correction given in the last column is applied to the "longitude of 2's meridian directed to the Earth," the longitude of the meridian is found which bisects the illuminated disk. The First (or Zero) Meridian, from which the longitudes are reckoned is that which at the Greenwich midnight preceding January 1. 1872, was apparently directed to the Earth, and which is assumed to rotate at the daily rate of  $870^{\circ}60$ , the corresponding period of rotation being  $9^h 55^m 27^s.08$ . If suitable observations for ascertaining the true rate of rotation for different spots have been made during the apparitions of *Jupiter* from 1872 to 1878, for which Ephemerides were published, they have not yet come to my knowledge. The numerous observations of passages across the central meridian which have been made during the last season appear to have been confined to those of the red spot in the planet's southern hemisphere. Though their proper discussion must be deferred till the end of this exceptional appearance, and till all the accounts are available, a preliminary examination of the results will not be uninteresting, and I give, therefore, a list of the observed passages which have hitherto come to my knowledge, together with the corresponding longitudes of the meridian which bisected the illuminated disk, as derived from the Ephemeris, and also with the longitudes corrected by the quantity  $-0^{\circ}.17$  ( $t$  - Oct. 17.0 1879). The period of rotation corresponding to the daily rate  $870^{\circ}.43$  is  $9^h 55^m 34^s.1$ . A small correction, depending on the Jovicentric latitude of the spot and on the correction in the last column of the Ephemeris, is still required in those cases in which the observed passage does not refer to the meridian which is equidistant from the two limbs (one of which is affected by the phase), but to the line perpendicular upon and bisecting the apparent equatoreal diameter. Except at opposition, this line does not pass through the poles of the planet, and is not a meridian line, and though the difference is small for spots not far from the equator, it may become very sensible for spots in higher latitudes.

The sources from which the list is derived are mentioned *post*, p. 429 : the times are Ath. Athens, Br. Brussels, Gr. Greenwich, Mo. Moscow mean times, as supplied by the observers ; in the cases, however, where seconds are given, tenths of minutes have been substituted for the sake of uniformity.

Corresponding Longitudes.

Rot. 87° 60.

Rot. 87° 43.

Observed Passages.

1879.	Observed Passages.			Observer.	Corresponding Longitudes.			Foll. End.	Rot. 87° 60.			Foll. End.	Rot. 87° 43.		
	Prec. End.	Middle.	Foll. End.		Prec. End.	Middle.	Foll. End.		Prec. End.	Middle.	Foll. End.		Prec. End.	Middle.	Foll. End.
	h m	h m	h m		°	°	°		°	°	°		°	°	°
July 10	—	19 11.3	—	Gr. Pritchett	—	243.9	—	—	—	260.6	—	—	—	260.6	—
22	—	19 1.3	—	"	—	246.2	—	—	—	260.9	—	—	—	260.9	—
26	—	12 25.0	—	" Pratt	—	249.4	—	—	—	263.4	—	—	—	263.4	—
28	14 18.4	14 38.4	14 48.5	Br. Niesten	248.8	260.9	267.1	262.5	262.5	274.6	280.7	267.1	262.5	274.6	280.7
29	10 4.7	10 19.8	10 34.8	"	246.2	255.3	264.4	259.8	259.8	268.8	277.	264.4	259.8	268.8	277.
31	11 30.6	11 54.6	12 15.6	"	239.5	254.0	266.7	252.7	252.7	267.2	279.	266.7	252.7	267.2	279.
Aug. 2	12 50	13 27.8	—	"	229.0	249.4	—	241.8	241.8	262.3	—	—	241.8	262.3	—
4	—	15 8.2	15 29.8	"	—	254.0	267.1	—	—	266.5	279.6	267.1	—	266.5	279.6
6	—	16 25.3	—	Gr. Pritchett	—	252.7	—	—	—	264.8	—	—	—	264.8	—
7	11 30	—	—	" Brewin	224.9	—	—	236.8	236.8	—	—	—	—	—	—
7	—	22 12.3	—	" Pritchett	—	253.2	—	—	—	265.2	—	—	—	265.2	—
8	—	18 2.3	—	"	—	252.8	—	—	—	264.6	—	—	—	264.6	—
9	13 38.5	14 0.5	—	Br. Niesten	233.5	246.8	—	245.1	245.1	258.4	—	—	245.1	258.4	—
10	9 39.1	10 8.1	10 31.0	"	239.4	256.9	270.8	250.9	250.9	268.4	281.5	270.8	250.9	268.4	281.5
12	11 17	11 38	12 1.5	"	240.1	252.8	267.0	251.2	251.2	263.9	278.1	267.0	251.2	263.9	278.1
15	—	18 42.3	—	Gr. Pritchett	—	252.1	—	—	—	263.7	—	—	—	263.7	—
16	—	14 34.1	—	"	—	252.8	—	—	—	263.2	—	—	—	263.2	—
17	10 28.6	10 43.9	11 7.2	Br. Niesten	244.5	253.8	267.8	254.8	254.8	264.1	278.1	267.8	254.8	264.1	278.1
18	—	16 11.9	—	Gr. Pritchett	—	253.4	—	—	—	263.5	—	—	—	263.5	—
20	—	17 48.3	—	"	—	253.2	—	—	—	262.9	—	—	—	262.9	—

1880MNRAS

Corresponding Longitudes.

1879.	Observed Passages.			Observer.	Rot. 87° 60.		Rot. 87° 43.	
	Prec. End. h m	Middle. h m	Foll. End. h m		Prec. End. °	Middle. °	Prec. End. °	Middle. °
Aug. 22	—	19 25.3	—	Gr. Pritchett	—	253.3	—	262.7
24	—	21 0.6	—	"	—	252.4	—	261.4
25	—	16 51.8	—	"	—	252.7	—	261.6
27	—	18 29.3	—	"	—	253.1	—	261.7
28	—	14 19.0	—	"	—	252.5	—	260.9
29	—	10 14	—	Backhouse	—	255.1	—	263.3
29	—	20 7.3	—	"	—	253.8	—	262.0
30	—	15 58.1	—	"	—	253.9	—	261.9
31	11 33.6	12 4.4	—	Br. Niesten	234.1	253.7	242.0	261.6
Sept. 1	—	17 33.9	—	Gr. Pritchett	—	253.3	—	261.0
3	9 10	—	—	Br. Niesten	239.5	—	246.9	—
3	—	9 19	—	Gr. Pratt	—	255.5	—	262.9
3	—	19 9.8	—	Pritchett	—	252.7	—	260.1
4	—	15 2.3	—	"	—	253.8	—	261.0
6	—	16 40.7	—	"	—	254.7	—	261.6
8	—	8 25	8 55	MacCance	—	256.4	274.6	263.0
8	—	18 15.8	—	Pritchett	—	253.7	—	260.2
10	—	10 1.5	—	Pratt	—	256.2	—	262.4
10	—	19 51.7	—	Pritchett	—	253.1	—	259.2
11	—	8 25.9	—	Mo. Bredichin	—	258.2	—	264.3

281.1

Observed Passages.				Corresponding Longitudes.			
1879. Sept. 12	Prec. End.	Middle.	Foll. End.	Observer.	Prec. End.	Middle.	Foll. End.
	h m	h m	h m		°	°	°
13	—	11 59.1	—	Br. Niesten	—	258.1	264.0
14	—	17 22.3	—	Gr. Pritchett	—	254.8	260.5
15	—	13 13.9	—	"	—	255.3	260.9
15	8 35	9 7	—	" MacCance	237.4	256.7	262.1
15	—	11 43.7	—	Mo. Bredichin	—	260.6	266.0
15	—	18 59.7	—	Gr. Pritchett	—	255.1	260.4
16	—	14 50.9	—	"	—	255.4	260.5
17	—	13 18.6	—	Mo. Bredichin	—	259.4	264.4
18	—	9 11.3	—	"	—	260.5	265.4
20	—	10 48.2	—	"	—	260.5	265.0
20	—	18 6.3	—	Gr. Pritchett	—	256.2	260.7
22	9 37.1	10 0.7	10 30.1	Br. Niesten	239.1	253.4	257.6
22	—	12 25.1	—	Mo. Bredichin	—	260.4	264.6
22	9 29	9 33	10 23	Gr. Baekhouse	244.8	260.5	264.7
23	—	8 17.8	—	Mo. Bredichin	—	261.5	265.6
24	—	11 55	—	Br. Niesten	—	263.8	267.6
25	—	9 55.7	—	Mo. Bredichin	—	262.1	265.7
25	—	7 44.5	—	Br. Niesten	—	263.0	266.7
25	—	17 12.3	—	Gr. Pritchett	—	256.9	260.5
26	—	13 3.1	—	"	—	256.9	260.4

		Observed Passages.			Corresponding Longitudes.				Rot. 87° 43.		
		Prec. End.	Middle.	Foll. End.	Observer.	Prec. End.	Middle.	Foll. End.	Prec. End.	Middle.	Foll. End.
		h m	h m	h m		°	°	°	°	°	°
1879.											
Sept.	27	8 44.6	9 11.9	9 41.9	Br. Niesten	240.6	257.2	275.3	244.0	260.5	278.6
	27	9 19.8	9 48.3	10 23.3	Berlin Lohse	240.1	257.3	278.5	243.5	260.7	281.8
	27	—	8 59	—	Gr. Pratt	—	259.9	—	—	263.3	—
	27	—	11 35.6	—	Mo. Bredichin	—	263.8	—	—	267.1	—
	27	—	18 51.3	—	Gr. Pritchett	—	258.1	—	—	261.3	—
	29	—	10 43	—	" Backhouse	—	264.1	—	—	267.1	—
	30	—	16 19.6	—	" Pritchett	—	258.3	—	—	261.0	—
	1	—	12 15.5	—	" Pratt	—	261.3	—	—	264.0	—
Oct.	2	7 59.4	8 19.4	8 44.8	Br. Niesten	246.6	258.6	274.0	249.1	261.1	276.5
	2	—	10 43.1	—	Mo. Bredichin	—	265.2	—	—	267.7	—
	3	—	6 30.9	—	"	—	263.4	—	—	265.7	—
	5	—	8 10.8	—	"	—	265.0	—	—	267.0	—
	5	—	15 26.1	—	Gr. Pritchett	—	259.0	—	—	261.0	—
	6	—	11 22.3	—	" Pratt	—	262.2	—	—	264.0	—
	6	10 59	11 23	—	" Backhouse	248.2	262.7	—	250.0	264.5	—
	6	11 25.7	11 42	12 3	Br. Niesten	253.7	263.6	276.3	255.5	265.4	278.1
	7	7 12.5	7 32.5	7 53.5	"	251.3	263.4	273.1	252.9	265.0	274.7
	7	—	17 4.3	—	Gr. Pritchett	—	259.6	—	—	261.2	—
	8	—	12 56.7	—	"	—	260.5	—	—	262.0	—
	11	—	13 7.5	—	Mo. Bredichin	—	268.0	—	—	269.0	—



Corresponding Longitudes.

Rot. 87° 0' 43.

Prec. End.

Observer.

Foll. End.

Middle.

Prec. End.

1879.

Oct. 12

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Observed Passages.				Corresponding Longitudes.				Rot. 87° 0' 43.	
	1879.	Prec. End.		Foll. End.	Observer.	Prec. End.		Middle.	Foll. End.
		h	m			h	m		
Oct. 30	Nov. 1	—	—	—	Gr.	11	6.3	266.1	263.8
					Mo.	5	24.6	269.7	267.1
2	2	—	—	—	Gr.	8	35.3	266.4	263.6
					"	8	45	272.2	269.4
3	5	—	—	—	"	14	20.8	265.7	262.9
					"	6	4.3	266.6	263.3
5	6	—	—	—	"	16	0.7	267.1	263.7
					"	11	53.0	267.8	264.1
7	7	7	13	8	"	7	44	267.8	261.2
					"	7	47	269.6	260.0
7	10	—	—	—	"	—	—	249.1	245.5
					"	6	17.9	250.3	246.7
10	10	—	—	—	Ath.	6	50.5	249.8	245.7
					Gr.	15	7.2	267.2	263.0
12	12	—	—	—	"	6	45	264.6	260.1
					"	8	24.7	267.4	263.0
12	12	7	17.7	8	Ath.	8	47.6	226.9	222.5
					Gr.	6	20	249.4	245.0
12	12	—	—	—	"	6	50	267.6	263.1
					"	6	50	267.6	263.1
12	14	—	—	—	Mo.	9	25.8	270.9	266.4
					Gr.	7	59	250.2	245.4
		7	59	9	Gr.	8	25	265.9	261.1
					Gledhill	—	—	290.7	285.9

Corresponding Longitudes.

Observed Passages.

	Observed Passages.			Observer.	Corresponding Longitudes.			Rot. 87° 0' 43".		
	Prec. End. h m	Middle. h m	Foll. End. h m		Prec. End. °	Foll. End. °	Prec. End. °	Middle. °	Foll. End. °	
1879.										
Nov. 15	—	14 13.3	—	Gr.	—	—	—	267.0	—	—
17	5 35	—	—	"	254.6	—	249.3	—	—	—
19	—	7 35	—	"	—	—	—	268.0	—	—
19	—	7 35.5	—	"	—	—	—	268.3	—	—
22	—	14 58.3	—	"	—	—	—	267.3	—	—
23	—	10 52.3	—	"	—	—	—	269.0	—	—
24	7 52.7	8 23.0	8 50.5	Ath.	253.5	288.5	247.0	271.8	265.3	282.0
25	—	5 7.9	—	Mo.	—	—	—	270.9	264.2	—
25	—	12 32.8	—	Gr.	—	—	—	270.6	263.9	—
26	8 18.9	8 43.9	9 8.9	Br.	257.1	287.3	250.2	272.2	265.3	280.4
28	—	10 5.3	—	Gr.	—	—	—	272.7	265.5	—
29	5 39.3	6 4.3	6 34.3	Br.	251.8	285.1	244.5	266.9	259.6	277.7
29	5 15	5 50	6 30	Gr.	247.7	293.0	240.4	268.9	261.5	285.7
29	—	5 53	6 21	"	—	287.6	—	270.7	263.3	280.3
29	—	15 49.3	—	"	—	—	—	271.1	263.7	—
30	—	11 40.3	—	"	—	—	—	271.0	263.5	—
Dec. 1	7 3	7 35	—	"	253.9	—	246.2	273.2	265.5	—
2	—	3 53.4	—	Br.	—	—	—	279.1	271.2	—
3	8 45	9 10	—	Gr.	256.3	—	248.3	271.4	263.4	—
4	—	7 33.2	—	Mo.	—	—	—	272.5	264.3	—

1880MNRAS

Corresponding Longitudes.

Observed Passages.				Rot. 87° 43'.				Rot. 87° 43'.			
	Prec. End.	Middle.	Foll. End.	Observer.	Prec. End.	Middle.	Foll. End.	Prec. End.	Middle.	Foll. End.	
1879.	h m	h m	h m		°	°	°	°	°	°	
Dec. 4	6 9.3	6 50.6	7 0.7	Ath. Schmidt	255.2	280.2	286.3	247.0	272.0	278.1	
6	—	6 36	—	Gr. Pratt	—	269.6	—	—	261.0	—	
6	6 28.9	6 54.6	7 23.9	Br. Nielsen	254.7	270.3	288.0	246.2	261.8	279.4	
6	6 14	6 40	7 10	Gr. Backhouse	256.3	272.0	290.1	247.7	263.4	281.6	
6	6 5	6 45	7 15	" Gledhill	250.8	275.0	293.1	242.3	266.5	284.6	
6	—	6 45	7 15	" Knott	—	275.0	293.1	—	266.5	284.6	
6	7 58.9	8 18.8	8 52.3	Ath. Schmidt	262.3	274.3	294.6	253.8	265.8	286.1	
8	8 2.2	8 29.2	8 55.2	Br. Nielsen	251.9	268.2	283.9	243.0	250.3	275.0	
8	7 41	8 21	8 46	Gr. Gledhill	249.7	273.8	288.9	240.7	264.9	280.0	
9	4 2.0	4 22.3	4 56.8	Br. Nielsen	257.1	269.4	290.2	248.1	260.3	281.2	
11	5 22	—	—	Gr. MacCance	256.8	—	—	247.4	—	—	
11	—	15 40.6	—	" Pritchett	—	270.7	—	—	261.3	—	
12	—	11 33.0	—	" "	—	271.5	—	—	261.9	—	
13	—	7 35	—	" Backhouse	—	278.0	—	—	268.3	—	
16	4 49.9	5 16.9	5 44.4	Br. Nielsen	258.8	275.1	291.7	248.6	264.9	281.5	
16	—	14 50.3	—	Gr. Pritchett	—	272.3	—	—	262.0	—	
18	6 18.3	6 48.3	7 15.3	Br. Nielsen	253.0	271.1	287.5	242.4	260.6	276.9	
20	—	8 30	—	" "	—	273.4	—	—	262.4	—	
22	—	9 52.6	—	Gr. Pritchett	—	274.6	—	—	263.3	—	
23	5 38.4	6 2.9	6 32.9	Br. Nielsen	260.8	275.6	293.7	249.3	264.1	282.3	
23	5 18	5 48	6 15	Gr. Backhouse	259.0	277.2	293.5	247.6	265.7	282.0	

Corresponding Longitudes.

Observed Passages.

	Observed Passages.			Observer.	Corresponding Longitudes.			Rot. 87° 43'.		
	Prec. End. h m	Middle. h m	Foll. End. h m		Prec. End. °	Middle. °	Foll. End. °	Prec. End. °	Middle. °	Foll. End. °
1879. Dec. 24	—	11 31.8	—	Gr. Pritchett	—	275.3	—	—	263.7	—
25	7 1	7 27	7 56	" Baekhouse	262.0	277.7	295.3	250.2	266.0	283.5
26	4 35.2	4 51.5	5 14.1	Ath. Schmidt	266.9	276.7	290.4	255.0	264.8	278.5
26	—	13 10.3	—	Gr. Pritchett	—	275.6	—	—	263.6	—
1880. Jan. 4	5 15	5 42	6 11	" MacCance	261.6	277.9	295.4	248.1	264.4	282.0
12	—	12 16.3	—	" Pritchett	—	279.1	—	—	264.2	—
14	—	13 54.3	—	" "	—	279.0	—	—	263.8	—
17	—	4 5.0	—	Mo. Bredichin	—	283.0	—	—	267.4	—
17	—	11 23.4	—	Gr. Pritchett	—	278.8	—	—	263.1	—
19	—	5 43.4	—	Mo. Bredichin	—	283.2	—	—	267.2	—
19	—	13 0.8	—	Gr. Pritchett	—	278.4	—	—	262.3	—
26	3 47.9	4 12.9	4 42.9	Br. Niesten	266.1	281.2	299.3	248.9	264.0	282.1
26	—	—	4 30	Gr. Gledhill	—	—	302.1	—	—	284.9
28	5 15.3	5 43.3	6 11	Br. Niesten	259.6	276.5	293.2	242.0	258.9	275.7
28	5 10	5 40	6 15	Gr. Gledhill	266.9	285.1	306.0	249.4	267.5	288.5
Feb. 4	5 30	—	—	" Brewin	251.4	—	—	232.7	—	—
4	6 4	6 30	6 58	Br. Niesten	261.4	277.1	294.0	242.6	258.4	275.3
5	—	12 6.3	—	Gr. Pritchett	—	281.3	—	—	262.3	—
7	—	13 43.3	—	" "	—	280.6	—	—	261.4	—
22	6 6	—	—	Cambr. Trouvelot	271.3	—	—	249.4	—	—

The times of the observed passages contained in the list are taken from the following sources:—

- T. W. BACKHOUSE, Sunderland. *Monthly Notices*, vol. xl. p. 157.  
 TH. BREDICHIN, Moscow. *Annales de l'Observatoire de Moscou*, tom. vi. 2 livraison, p. 105, 106.  
 T. D. BREWIN, Leicester. *Monthly Notices*, vol. xl. p. 377.  
 J. GLEDHILL, Halifax. *The Observatory*, vol. iii. p. 280 and 355.  
 N. GREEN, St. John's Wood. Private communication.  
 G. KNOTT, Cuckfield. *Astron. Register*, vol. xviii. p. 91.  
 O. LOHSE, Potsdam. *Astron. Nachr.* No. 2282.  
 J. L. MAC CANCE, Putney. Private communication.  
 L. NIESTEN, Brussels. *Bulletins de l'Acad. Roy. de Belgique*, t. xlvi. no. 12.

[The observations from November 26 to February 4 have been kindly communicated by letter.]

- H. PRATT, Brighton. *Monthly Notices*, vol. xl. p. 154.  
 C. H. PRITCHETT, Glasgow, Miss. From a list kindly communicated in MSS., in which the observed times are already given in Greenwich M. T.  
 J. SCHMIDT, Athens. *Astron. Nachr.* No. 2309.  
 L. TROUVELOT, Cambridge, Mass. *Observatory*, vol. iii. p. 417, where for G. M. T. must be read Cambr. M. T.

An examination of the longitudes in the three last columns will give at least some preliminary indications of the errors of the observations and of the deviations of the motion of the red spot from regularity. The discrepancies between the observations of different observers and on different days point to the existence of some grave sources of error and show the necessity for greater care and caution. On the other hand, the consideration of the fair agreement frequently found may give some assurance that the observations are worth making, and observers may perhaps be induced thereby to spend sufficient time and patience in watching the passages across the central meridian of all well-marked points on the planet's surface, so that at last proper observations may be available for investigating the various motions which are going on there.